CASE STUDY

SAVING ENERGY IN MARYLAND

Energy Upgrades Help Low Income Couple in Maryland

Arnold, Maryland

Ernest and Cathleen Butler, owners of a 1940 home, were struggling with their high energy bills. Ernest, who is disabled, was physically and financially unable to repair the warped doors, poorly fitting windows, and leaky roof on his wood-framed home. Ernest and Cathleen did what they could by taping the gaps in the windows and doors to keep out the winter cold and turning up the thermostat.

Rebuilding Together, a non-profit organization that retrofits existing homes, and the NAHB Research Center, a subsidiary of the National Association of Home Builders (NAHB) donated their time and materials to increase the energy efficiency of the Butler home.

A recent study found that low income households spend more than 19% of their income on energy, and elderly homeowners living on fixed incomes spend up to 35% of their income. To bring down the Butlers' high energy bills, volunteers addressed the largest problems first:

The roofing material had deteriorated, and the soffit and facia were rotted or missing altogether. Leaks caused insulation to get wet, undermining its thermal properties and allowing energy to escape through the attic.

By replacing the roof and cornice, further structural damage was prevented, and the new blown fiberglass insulation provides comfort in the home's living areas. Because a portion of the house has no attic, insulation was blown into the rafter cavities from the outside before the new shingles were installed.

Some of the less expensive energy improvements to the Butler home have produced substantial results. Installing weatherstripping, caulking, air-sealing, pipe insulation, adding a water heater blanket, and sealing ductwork in the basement were completed by volunteers over the course of a single day.

Previously, the Butlers used window-based air-conditioners that did not provide an efficient means of keeping the home comfortable. All of the window-based units were replaced with a 12-SEER central air-conditioner. New low-emissivity (low-E) vinyl windows and insulated steel entry doors reduce air flow to the exterior and thereby cut down on energy needed for conditioned air.

"We're going to be so much more comfortable in our home now," said Ernest, "that is, we'll be comfortable in terms of both living in the home and paying the utility bills."

HIGH PERFORMANCE FEATURES OF THE BUTLER HOME

- ENERGY STAR® refrigerator, clothes washer and dryer, and dishwasher
- New, well sealed roof and soffits
- Blown-in insulation in rafter cavities
- Sealing, caulking, and weatherstripping
- Water heater blanket
- Efficient 12-SEER central AC
- Low-E windows and insulated doors